CHAPTER 7, FORM B
TRIGONOMETRY

NAME _____
DATE _____

1. Given that $a = 29$ and $b = 50$ in a triangle ABC, which of the following is impossible.

a. $c = 18$ **b.** $c = 25$
c. $c = 43$ **d.** $c = 69$

1. _____

Find the indicated part of each triangle ABC.

2. $C = 32°$, $B = 21° \ 30'$, $c = 47.8$ ft; find b.

2. _____

3. $B = 42° \ 45'$, $b = 18.2$ cm, $c = 21.5$ cm; find C.

3. _____

4. Explain when you would use the Law of Sines to solve a triangle.

4. _____

Solve each triangle ABC having the given information.

5. $a = 32$ cm, $b = 49$ cm, $c = 63$ cm

5. _____

6. $A = 108° \ 40'$, $b = 70.3$ m, $c = 60.5$ m

6. _____

7. Find the area of triangle ABC, given that $A = 42° \ 25'$, $b = 61.3$ in. and $c = 59.8$ in.

7. _____

Solve each problem.

8. The sides of a triangular lot measure 75 m 85 m, and 110 m. Find the area of the lot.

8. _____

9. From point A, an observer can see two points, B and C, on opposite sides of a pond. The distance from A to B is 121 yds. The distance from A to C is 109 yds. The angle between the two lines of sight is 37.8°. How far is it from B to C?

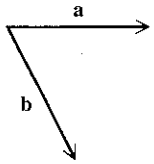
9. _____

10. True or false: According to the parallelogram rule, the resultant vector of **A** and **B** is the diagonal of the parallelogram that has **A** and **B** as two adjacent sides.

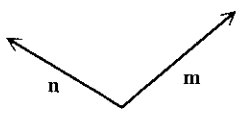
10. _____

Sketch the indicated vectors.

11. a + b



12. m – n



13. Forces of 18.0 and 25.0 pounds are combined at an angle of 65°. Find the magnitude of the resultant force. **13.** _____

14. Find the magnitude and direction angle for $\mathbf{u} = \langle -7, 8 \rangle$, rounded to the nearest tenth. **14.** _____

15. Write $\mathbf{u}$ in the form $\langle a, b \rangle$ if $|\mathbf{u}| = 7.5$, and the direction angle of $\mathbf{u} = 60°$. **15.** _____

Find the *horizontal* component of each vector, where α is the inclination of the vector from the horizontal.

16. $\alpha = 58°$; magnitude 89.5 **16.** _____

17. $\alpha = 49°$; magnitude 26.8 **17.** _____

Solve each problem.

18. Two people are dragging a trunk with ropes. One is pulling with a force of 92 pounds, the other with a force of 87 pounds. The angle between the two ropes is 96°. What is the resultant force? **18.** _____

19. A force of 42.8 pounds makes an angle of $46° \ 25'$ with a force of 39.6 pounds. Find the angle made by the equilibrant with the 42.8-pound force. **19.** _____

20. A plane is heading due north with a ground speed of 395 mph. A 45-mph wind is blowing at a bearing of 52°. Find the plane's resulting speed. **20.** _____